


ORANGE COUNTY
PROTECT & PRESERVE
OUR HARBORS & COASTLINE
COASTKEEPER

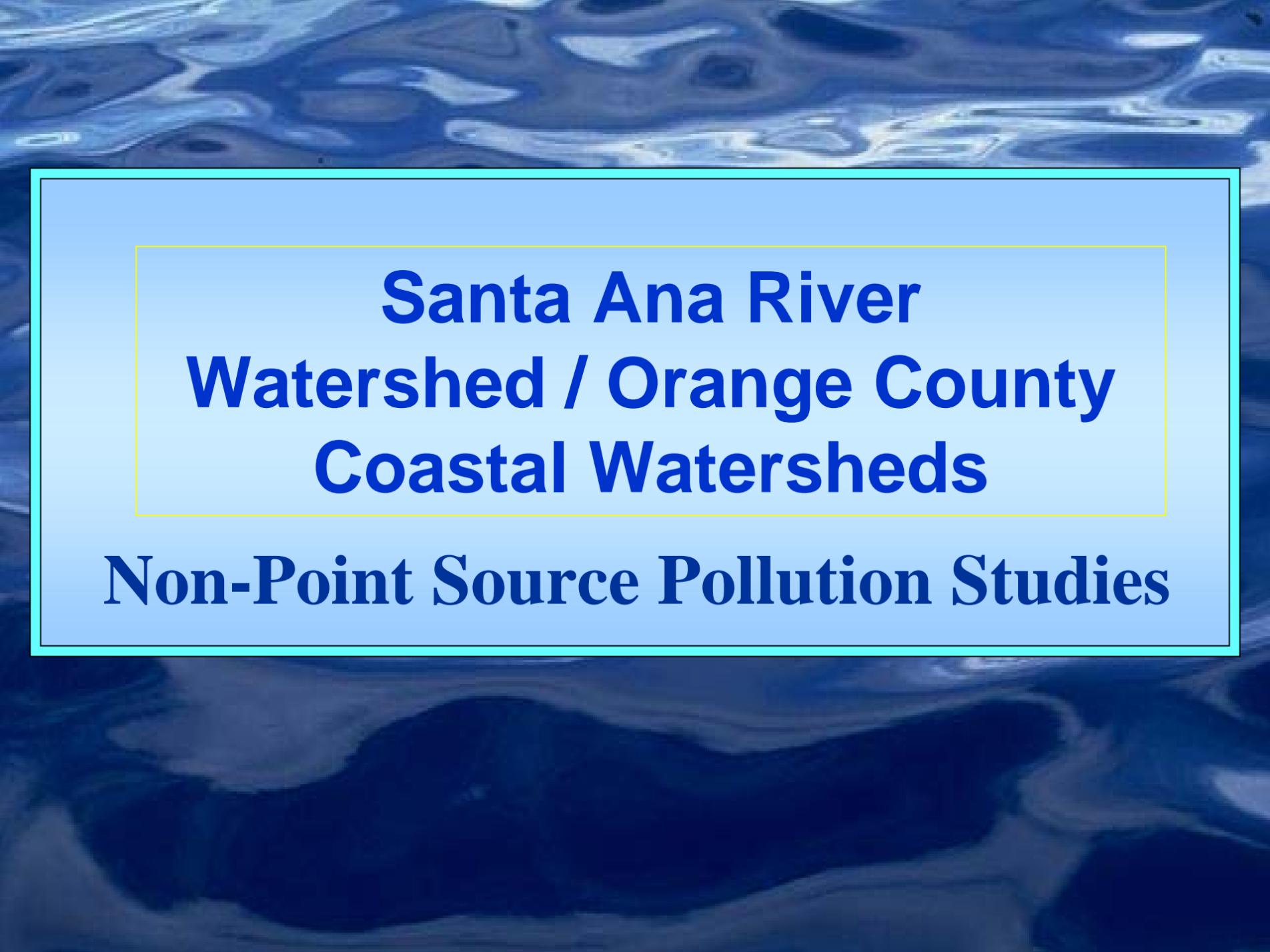




“Our mission is to protect and preserve Orange County's marine habitats and watersheds through education, advocacy, restoration, and enforcement.”

Citizen Monitoring Projects

**A Community Approach
to
Better Water Quality**



**Santa Ana River
Watershed / Orange County
Coastal Watersheds**

Non-Point Source Pollution Studies

PROJECT FUNDING

➤ Funded full or in part by the EPA through 319h grant and Proposition 13 funds administered by the S/RWQCB.

➤ Monthly budget for the project: \$7,250



www.delorme.com



Data Zoom 8-4

PROJECT DESCRIPTION

- **To monitor 42 sites on fifteen streams in the Santa Ana River Watershed**
- **The Santa Ana Watershed Monitoring Project was a cooperative effort between:**
 - **Orange County Coastkeeper as Lead Agency**
 - **Riverside-Corona Resource Conservation District**
 - **East Valley Resource Conservation District**

The Orange County Coastal Watersheds Monitoring Project is run entirely by O.C. Coastkeeper and is still in progress

PROJECT DESCRIPTION

- To collect accurate & usable water quality data from selected streams.
- To analyze and report the data collected to the Regional Water Quality Control Board.
- To educate the public through their participation in data collection.
- To discuss with the public the data collected and how it relates to non-point source pollution.

PROJECT VARIABLES

➤ Physical

- Flow
- Temperature
- Turbidity

➤ Metals

- Cadmium
- Chromium
- Copper
- Lead/Zinc
- Nickel
- Silver

➤ Chemical

- Ammonia
- Conductivity
- Dissolved Oxygen
- Nitrate
- Ph
- Phosphate

➤ Biological

- Bacteria Testing
- Bioassessment
- Biosurvey

WATERSHED PROBLEMS

➤ Poor Water Quality

In the Santa Ana River Watershed, 33 segments are listed by the Santa Ana Regional Water Quality Control Board as impaired water bodies, pursuant to Section 303(d) of the Clean Water Act. The RWQCB has developed Total Maximum Daily Load (TMDLs) for Newport Bay.

WATERSHED SUMMARY

- Ammonia levels spiked after rain on the Santa Ana River and is high at several other streams.
- Nitrate levels generally meet basin plan plans.
- pH and conductivity is relatively high throughout the project area.
- Phosphorus was consistently high at all sites.
- Bacteria counts were continually high during each monitoring event.
- There were no exceedences of any metals tested during the project.
- Bioassessments typically resulted in substantiating poor water quality.

Overall conditions exhibit classic qualities of urban runoff impacted streams, with high nutrient levels and high bacteria levels.

VOLUNTEERS

Citizen Monitoring Projects combine the knowledge and commitment of interested citizens with the technical expertise and resources of non-profit and public agencies.

VOLUNTEERS!!!



VOLUNTEER TRAINING

➤ All volunteers go through 3 hours of initial training, followed by supervised field training.



VOLUNTEER TRAINING

➤ All volunteers receive comprehensive field and reference manuals.



VOLUNTEER TRAINING

➤ Volunteers use state-of-the-art field water monitoring equipment.





VOLUNTEER PARTICIPATION

VOLUNTEER STATS

**Number of Volunteers:
Over 400**

**Number of Volunteer Hours:
Over 5000**

**Number of Intern Hours:
Over 2000**

WATER QUALITY MONITORING



DATA ENTRY



DATA ANALYSIS

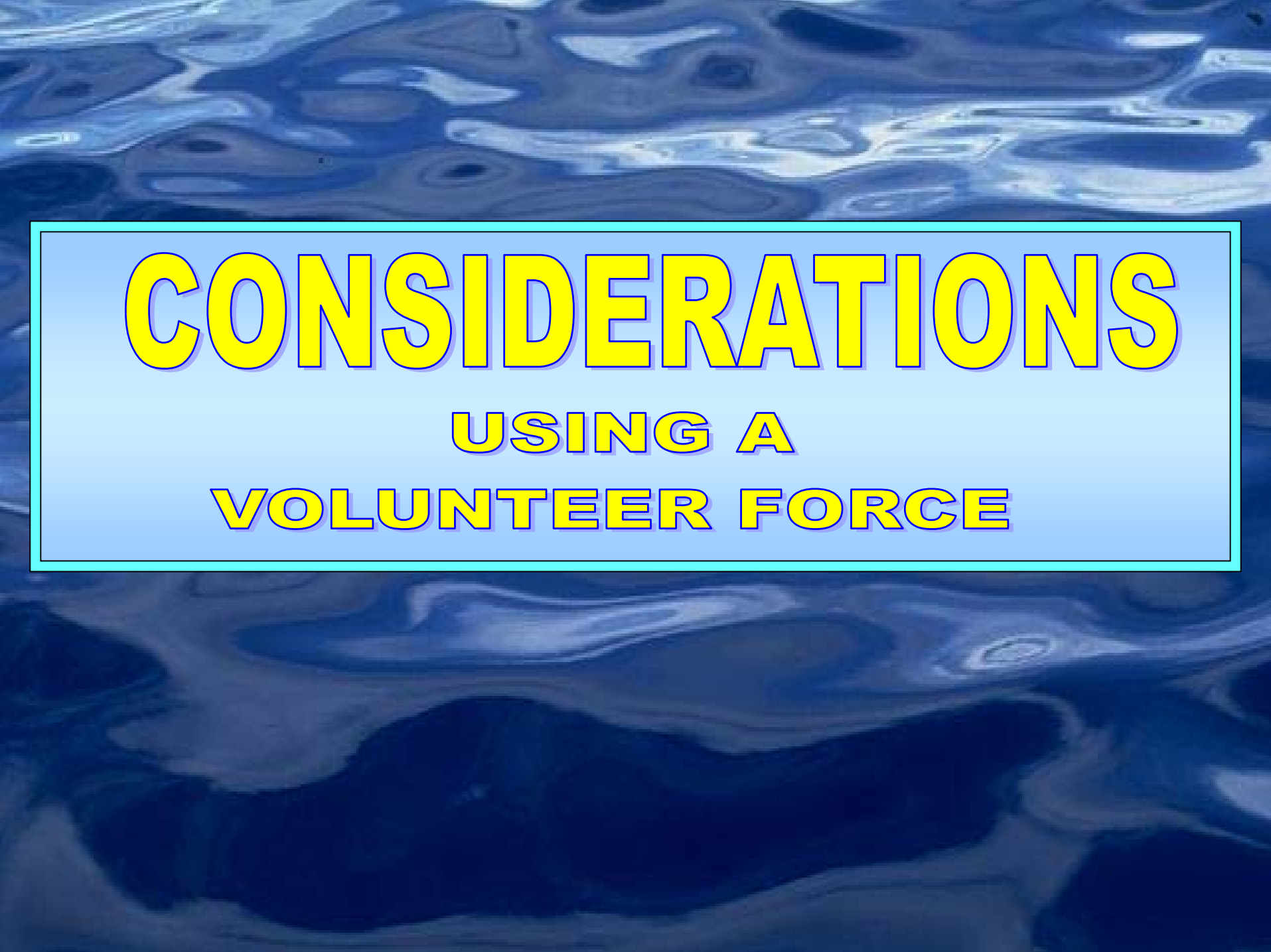


PUBLIC AWARENESS



EDUCATION PROGRAMS



The background of the slide is a blue marbled pattern with swirling, organic shapes in various shades of blue, from deep navy to light sky blue.

CONSIDERATIONS

**USING A
VOLUNTEER FORCE**

➤ Accuracy

- Accuracy is a function of practice. Volunteers must be carefully supervised to insure that procedures are followed.

➤ Attendance

- Usually, there is a small core of stable volunteers. It is necessary to maintain a continual active recruitment campaign to bolster volunteer staff.

➤ Consistency

- All project components must be written in plain, easy to understand language for all volunteers.

➤ Level of Participation

- Participation levels vary from interns to occasional community service. Training must be specific to each type of volunteer.

QUALITY CONTROL

➤ Calibration Sessions

- Quarterly sessions are conducted to insure that volunteers/staff are using equipment correctly.

➤ Training

- Comprehensive training manuals for volunteers.
- Volunteers are re-trained if it becomes necessary.

➤ Blanks/Duplicate Samples

- Duplicates and blanks are run for approximately 10% of our samples.

OVERALL...

➤ Quality Data

- Total cost of supplying quality data was minimal.
- All data gathered was delivered to the RWQCB for use in watershed management decisions.
- Numerous schools, students, and private agencies have requested copies of our data.

➤ Volunteer Participation

- Volunteers participated at various levels helping to a build a successful monitoring program.

OVERALL...

➤ Public Meetings

- Community meetings were held in various regions throughout the Santa Ana River Watershed to inform the public of study results.

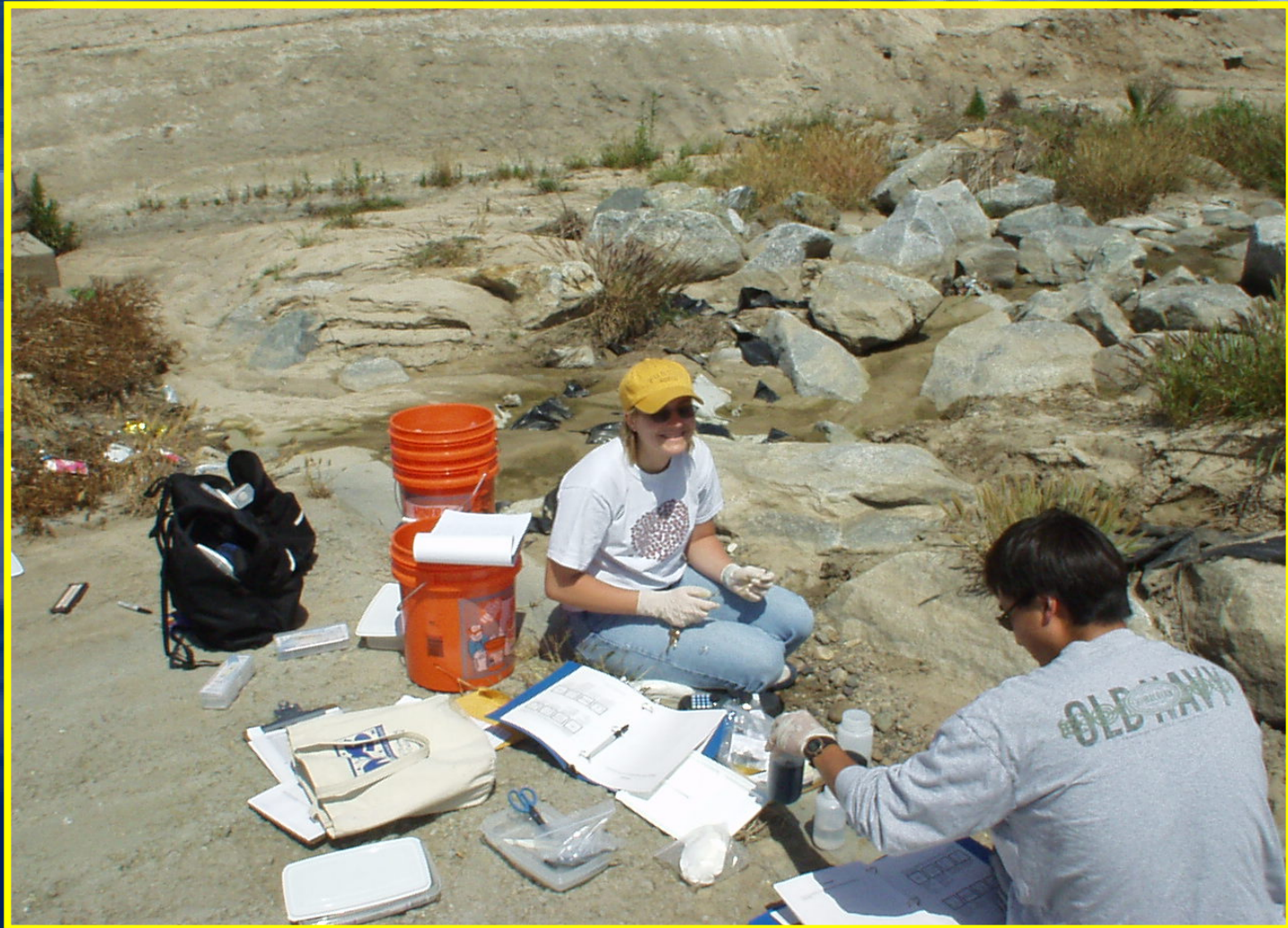
➤ Community Action

- Volunteers organized community groups to participate in local monitoring projects.

➤ Scholastic Events/Participation

- Diorama demonstrations were given at local schools and community group events.

VOLUNTEERS!!!



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